

Claims

[c1] What is claimed is:

1. An image projection system comprising:
a light source for generating a light beam;
a reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space; and
an invisible-light reflector installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space.

[c2] 2. The image projection system of claim 1 wherein the reflective housing is an elliptic reflective housing, and the light source is installed at a focal point of the elliptic reflective housing, and the optical path is a major axis of the elliptic reflective housing.

- [c3] 3. The image projection system of claim 1 wherein the predetermined angle formed by the normal of the invisible-light reflector and the optical path is an acute angle not equal to zero degree, so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the reflective housing.
- [c4] 4. The image projection system of claim 3 wherein the image projection system further comprising a light tube connected to the light source, wherein the infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the light tube.
- [c5] 5. The image projection system of claim 3 wherein the acute angle is smaller than 45 degrees.
- [c6] 6. The image projection system of claim 1 wherein the image projection system further comprises an image module, the image module comprising a plurality of controllable optical reflectors for modulating the light beam passing through the invisible-light reflector to generate a projecting beam containing an optical image, wherein the light beam passing through the invisible-light reflector does not comprise the infrared rays.

- [c7] 7. The image projection system of claim 6 wherein the image module is a digital micro-mirror device or a liquid crystal panel.
- [c8] 8. The image projection system of claim 1 wherein the reflective housing is a parabolic reflective housing, and the optical path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing.
- [c9] 9. An image projection system comprising:
a light source for generating a light beam;
an elliptic reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along a major axis of the elliptic reflective housing through the opening away from the accommodating space;
an image module comprising a plurality of controllable optical reflectors for modulating the light beam to generate a projecting beam containing an optical image; and
an invisible-light reflector installed between the reflective housing opening and the image module and at a reflecting position at which the invisible-light reflector intersects the major axis of the elliptic reflective housing,

a normal of the invisible-light reflector and the major axis intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space.

- [c10] 10. The image projection system of claim 9 wherein the predetermined angle formed by the normal of the invisible-light reflector and the major axis is an acute angle not equal to zero degree, so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the elliptic reflective housing.
- [c11] 11. The image projection system of claim 10 wherein the image projection system further comprising a light tube connected to the light source, wherein the infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the light tube.
- [c12] 12. The image projection system of claim 9 wherein the acute angle is smaller than 45 degrees.
- [c13] 13. The image projection system of claim 9 wherein the image module is a digital micro-mirror device or a liquid crystal panel.
- [c14] 14. The image projection system of claim 9 wherein the

light source, the reflective housing, and the invisible-light reflector form an integral structure.

[c15] 15. An image projection system comprising:
a light source for generating a light beam;
a parabolic reflective housing comprising an opening,
the parabolic reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space; and
a invisible-light reflector installed at a reflecting position intersecting the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space, and then the invisible light will focus on a predetermined heat-dissipation position away from the focal point.

[c16] 16. The image projection system of claim 15 wherein the invisible-light reflector can be used to reflect infrared rays or ultraviolet rays of the light beam.